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Biomedical indicators study in terms of the modern type of technogenesis

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Abstract

© 2016, International Journal of Pharmacy and Technology. All rights reserved.Despite the high socio-economic, defense and medical importance, the problem of health development in men of military age and in military servicemen in general has not been sufficiently developed both theoretically and practically [1]. One of the objectives of the current military reform is to ensure medical assistance for military servicemen. The problem of health, the factors affecting the health and quality of life still remain insufficiently studied [2]. The problems of male health and its forming factors are to be developed as a coherent system of social attitudes and traditions of modernity, biomedical, economic, organizational and managerial aspects [3]. This study has applied a set of research methods: biological, chemical, biochemical, clinical, sociological, sociohygienic, immunofluorescent, cytological, statistical, medical and demographic, and clinical methods. Objective of the research is to study the systemically important medicobiological indicators of military technogenesis in order to develop the risk management mechanisms. All subjects were divided into two main groups: control group and experimental group. Control group (C) includes: C1 - civils, and C2 - private soldiers. Experimental group (E) includes: E1 - acting military servicemen, E2 - retired military servicemen. Military servicemen were divided by age, length of service and the type of troops. Age-specific cohort was divided into 6 groups: 18-29, 30-39, 40-49, 50-59, 60-69, and over 70 years old. Gradation according to length of service was as follows: less than 2 years, 3-9 years, 10-19 years, 20-29 years, and 30-39 years. During sociological studies, an attention was given to the production block (occupation, the presence of harmful factors, experience, etc.), medical and biological block (age, presence of chronic diseases, complaints) and social block (presence of harmful habits, diet, lifestyle). Each question and grading of answers had their own diagnostic feature and informational value. The coefficients were evaluated in points. Subject to the score level, four groups of cancer risk were formed: Group 1 (no risk), Group 2 (low risk), Group 3 (medium risk), Group 4 (high risk). The estimation of the immunological status of military servicemen was based on the indicators of humoral and cellular immune system. Analysis of survey and interview results made it possible to determine a significant excess in medium cancer risk in the experimental group as compared with control (42.5% vs. 14.6%). High cancer risk group is characteristic of retired military servicemen (actual retired) - 69.4%. It was determined that the gradation of the immunological states “not changed”, “slightly suppressed immune system”, “sharply suppressed immune system”, “depressed immune system” allowed ranking the immunological status subject to the contingent, the age and length of service. A significantly high immunosuppression value is observed in military servicemen in the age group of 50- 59 years old and with length of service of 15-19 years. According to data analysis of the conducted studies, the significance level of differences in the control and the experimental groups, according to immunologist’s report, is (P≤0.005) P=0.001, x2=0.1662. The comparative analysis also revealed that the group

c1kc2e1e2 has statistically significant differences in standard values and values below standard (ρ=0.368). The constructed model of the discriminant function with the resulting index “Immunologist’s report” with the characteristics of P<0.001 and a match of observed and calculated cases of one of the groups - 88.2%, ensures development of management mechanisms for the stabilization and improvement of qualitative and quantitative characteristics of the immune status.

Keywords

Biomedical indicators, Cancer risk, Immune system, Statistical data processing, Technogenesis